[Note from MC: There are new primary data from this area that may affect some of their conclusions; the interested reader can find relevant commentary in M.T. Carson, 2003, *Phase Two Archaeological study, Koniambo Project, Regions of Voh, Koné, and Pouembout, Northern Province, New Caledonia*; International Archaeological Research Institute, Inc., Honolulu, and at www. iarii.org/newcaledonia. htm]

Mary E. Shutler, R. Shutler Jr., and S. Bedford present a summary and update of the baseline archaeological data that the Shutlers originally reported for Southern Vanuatu in the 1960s. Bedford brings a new perspective, and he discusses how the 1960s data are important for newer research topics and directions in Vanuatu archaeology. Placing the older data in the context of new research is valuable enough in itself, but this article also provides a useful compiled table of radiocarbon dates and includes numerous previously unpublished photographs from that early excavation, and superb photographs they are.

Marshall Weisler's chapter on the identification of otoliths in the archaeological assemblage from Gifford and Shutler's 1950s work in New Caledonia is a nice compliment to the Davidson et al. paper in this volume. Weisler was able to identify specimens of bonefish, whiting, and javelinfish. This paper will hopefully encourage more work to identify fish otoliths. Weisler's work shows a significant increase in represented species diversity, so the identification is not a trivial exercise.

David Burley, A. Storey, and J. Witt present an update and summary of the Lapita ceramic assemblage in Tonga. There is a substantial amount of information on this subject, and the authors have done an excellent job of synthesizing it. There are a couple of important references that are missing (P. V. Kirch, 1978, "The Lapitoid Period in West Polynesia: Excavations and Survey in Niutoputapu, Tonga." *Journal of Field Archaeology*, Vol. 5:1-13; and T. S. Dye, 1996, "Early Eastern Lapita to Polynesian Plainware at Tongatapu and Lifuka: An Exploratory Data Analysis and Comparison," in J.M. Davidson et al., (eds.), *Oceanic Culture history: Essays in Honour of Roger Green*. Special publication by New Zealand Journal of Archaeology, Auckland), and it might have been useful to have a more detailed discussion of a similar (but now 10 years old) paper by Sand published in French in 1992 in a volume with very limited circulation. The authors have valuable conclusions about population movements and ceramic diversification, which as they say "will raise the ire of at least some of our colleagues who support a more traditional model for west to east exploration." Given this, it might have been to their advantage to have presented more documentation of stratigraphic context and an expanded set of comparative illustrations, but the sources for such data are presented to allow these data to be searched out.

Geoffrey Clark offers a paper about the spatial and chronological distribution of basalt adzes found in archaeological contexts in Fiji but having chemical signatures of Samoa (and probably specifically relating to the Tatagamatau adze quarry in Tutuila, American Samoa). This is a major topic in Polynesian archaeology, telling us about the nature of voyaging in prehistory, the nature of basalt adze quarry industries, and possibly the nature of a trading economy. Clark does a good job summarizing the available data from Fiji. Hopefully, more data will accrue over time with new work, and Geoff Clark's paper here can serve as the basis for more detailed discussions.

Atholl Anderson, S. Haberle, G. Rojas, A. Seelenfreund, I. Smith, and T. Worthy's paper concerning research on Robinson Crusoe Island (aka Más a Tierra), Juan Fernandez Archipelago is perhaps a bit out of place in this volume, but in the spirit of a "festival of writings" there is no need to dwell on that. This is part of an interesting project, a "programme of archaeological and paleoenvironmental research which aims to work on each of the remote eastern archipelagos of the South Pacific…It has a primary paleoenvironmental focus, which seeks to reconstruct archipelagic environments before and after settlements by Europeans, and to formulate ways of separating natural from human induced changes in sedimentary and palynological records." Further, for many of these islands, including Robinson Crusoe, there is little or no evidence for prehistoric occupation, which is important information concerning the long-term understanding of Pacific colonization.

The final chapter, "On Shutler and Marck 1975," is by Jeff Marck. This and the Introduction, which highlights Shutler's career, are complementary "bookends." The chapter includes a reminiscence about Shutler, and is also a reflection on one of Shutler's critical papers, as referenced in the chapter title, R. Shutler and J. Marck, 1975, "On the Dispersal of the Austronesian Horticulturalists." *Archaeology and Physical Anthropology in Oceania*, 10(2):81-113. The current paper is an opportunity for Marck to respond to attacks on the model presented in the 1975 paper and to bring in some new research to update the 1975 position. We found this to be one of the best chapters in the book, and a fitting closing tribute to Dick Shutler.

ꕥ

THE RIDDLE OF PRE-CONTACT WORLD MAPS and a review of *1421, the Year China Discovered America*

by Gavin Menzies (Harper-Collins, New York, 2002)

Review and Comments by Herbert von Saher, the Netherlands

FIRST THE FACTS…THEN THE FANTASY

The world has paid little attention to the fact that, during the last few centuries, a number of early maps have turned up. These give an accurate picture of the coasts of Africa and North and South America, and they date from years BEFORE European explorers had arrived in these areas. A most intriguing question poses itself: who could have created them? These maps include:

1) A map drawn by Fra Mauro, a Venetian cartographer, in 1459. It shows a clear picture of South Africa including the Cape of Good Hope. The first-known European to round the Cape was the Portuguese Bartolomeu Dias, in 1488. What makes this map so sensational are the notes on the side of it, indicating that, around 1420, a ship coming from India was driven around the Cape, that is to say in the direction op-

posite to Dias. Near this note Fra Mauro had drawn a picture of a ship with an unusually broad, square bow that looks exactly like a Chinese junk. One drawing is of an ostrich, evidently made by or copied from an eyewitness.

2) A map made by the Ottoman Admiral Piri Reis in 1513, now in the Topkapi Museum, Istanbul. It was reported that Piri Reis had based his map upon an older one that he had taken from a captured Spanish seaman in 1501. It shows the coastline of Africa and the Atlantic coast of South America from the Caribbean to Antarctica, and also shows the Andes, far inland (Figure 1). Piri Reis himself informs on this map that it is based on about twenty maps from Arab and Portuguese sources and for the Western Hemisphere on data from a map by a captured Spanish sailor who accompanied Columbus on his three voyages. Although Columbus arrived in the Caribbean before the date of this map, he never went farther south than the equator, and Magellan did not arrive in Patagonia until 1520. Here again the notes and drawings on the side of this map are extremely important. Animals only known in South America were drawn: the *huemil*, the Andean deer with great antlers, the guanaco and the *mylodon,* a monstrous sort of sloth, now extinct. It is evident that an eye-witness had been there. An interesting aspect of this map is that it shows a continuous line from Tierra del Fuego at the Southern tip of South America to Antarctica. It appears as a coastline, but it should probably be interpreted as the border of pack ice. I would not be surprised if this continuous line, with land showing to the east of it, would be the basis of the persistent myth that somewhere in the South Pacific there must be a "Southland", which Jacob Roggeveen, the discoverer of Easter Island in 1722, and Captain Cook fifty years later, were looking for.

Figure 1. The 1513 Piri Reis map showing Spain and Africa on the right and the Caribbean to Antarctica on the left (from the Gavin Menzies web site, www.1421.tv).

3) The most beautiful map of all is the Waldseemüller map of 1507. It was made by Martin Waldseemüller, an outstanding cosmographer from southern Germany. Once thought to be lost, it was found in 1901 but attracted little attention until it was sold (in 2001) to the American Library of Congress for $1,000,000. It is indeed priceless. It shows nearly the whole world, including the Bering Strait and parts of western Alaska, but not the North American west coast. It is reported that it was based on the "Caveri" planisphere, drawn at Genoa from a Portuguese prototype in 1502.

There were other maps made prior to European discoveries, but those cited above are the most important, and there can be no doubt about the dates when they were made. Proof of this is given by the Portuguese historian, Antonio Galvao, who wrote that, in 1428, the King of Portugal's eldest son returned from Venice with a map of the world "which had all parts of the world and earth described". This map included the Strait of Magellan and Cape of Good Hope. Galvao concluded that, in 1528, the King's son did show a map "which had been made 120 years before which map did set forth all the navigation of the East Indies with the Cape of Boa Esperanca according as our later maps have described it; whereby it appeareth that in ancient time there was as much or more discovered than now there is". Further proof is given by the explorers themselves: Columbus, on his way to the Caribbean, wrote in his diary on 14 November 1492: "And he says that he believes that these islands are without number which in the mappae mundi are placed at the end of the East". Antonio Pigafetta, the Venetian journal-keeper on board with Magellan, states that, when their fleet entered the Strait of Magellan, the sailors showed extreme anxiety. They knew that the water was too deep to anchor, and this together with heavy gales constantly changing direction made the passage through the narrow waters of this strait dangerous in the extreme. They nearly mutinied, but then Magellan spoke to the sailors, saying that: there is another strait which leads out, saying that he knew it well and had seen it in a marine chart of the King of Portugal, which a great pilot and sailor, named Martin of Bohemia, had made. So he knew that there was a way out to the Pacific. This shows that both explorers did not travel haphazardly, but that they knew where they were going from the maps that had been shown to them prior to their departure. This may cause some disillusion, but the fact that they obviously were not the first to arrive there does not detract from their courage and perseverance. In the 15th century these maps were indeed kept as priceless state secrets by the Kings of Portugal and Spain as well as in Venice, and only shown to those willing and considered capable to go exploring. This brings us back to the question: how could these maps have been made?

This is where Gavin Menzies' book *1421, the Year the Chinese Discovered America* comes in, and his answer to this question is obvious from his title. But before giving attention

to this book, let us first consider what the Chinese themselves have to say on this matter. We begin with some general Chinese history.

It is certain that, in the 14th and 15th centuries, Chinese civilization, including science and technology, were centuries ahead of Europe. In that period China was the paramount sea power of the Orient, and it controlled all the commerce in the waters of the East. When the Ming dynasty was at the apex of its power, it aspired to rule the entire known world, insisting that overseas states bring tribute to render homage to their emperor. With this rationale, the emperor Yung-lo (also called Zhu Di) ordered six naval expeditions in the first 20 years of the 15th century under the command of the eunuch admiral, Cheng Ho. These naval expeditions enabled the Chinese to extend their political control into the Indian Ocean, gave impetus to foreign commerce, and resulted in uninterrupted contact.

But before the sixth expedition returned in 1424, a series of disasters occurred: lightning struck the Imperial Palace (which was constructed shortly before in the Forbidden City of the new capital, Beijing) and it burned down completely; Yung-lo's favorite concubine died in the fire, along with hundreds of others inside the palace; China suffered humiliating defeats in costly ground battles trying to conquer the Vietnamese and the Mongols, who refused to pay tribute; and Yung-lo was thrown from his horse, an unbearable loss of face for a Chinese emperor. Even worse, some of his 2800 concubines became dissatisfied and even tried to initiate sexual relations with the eunuchs because the emperor had become impotent. Chinese rulers believed that they ruled with a mandate of heaven, so it was no wonder that Yung-lo could only conclude that "the God of Heaven is angry with me". Totally demoralized, he died in August 1424. Sixteen of his favorite concubines were buried alive with him.

On 7 September 1424, his son Zhu Gaozhi ascended the throne and immediately issued an edict ordering all sea voyages to cease, the building and repair of all ships to halt immediately, and all foreign trade stopped. Moreover, all records of the expeditions were to be burned "as deceitful exaggerations of bizarre things far removed from the testimony of people's eyes and ears". Thus, by a decree of the new emperor, who failed to grasp the possibilities of lasting sea power, China's role as a supreme naval power ended. A period of inward-looking started; practically all records were burned and there are only a very few that accidentally escaped destruction. This bit of history was necessary in order to explain why it is so difficult to trace any records of the expeditions of the Ming Navy.

MA HUAN, "THE OVERALL SURVEY OF THE OCEAN'S SHORES"

Fortunately there is at least one exception to this all-out destruction. In 1433, Ma Huan, an interpreter on Admiral Cheng Ho's fleet, published his diaries "Ying-yai Sheng-lan", translated as *The Overall Survey of the Ocean's Shores* (J. V. G. Mills, the Hakluyt Society, 1970). Much of the information included here comes from this unique source. The translation likely was the work of a monk, because it is quite difficult to translate Chinese geographical names into the names we know today. For instance one mighy guess that "A-tan" must be Aden, "Hsi-lan" is Ceylon, and "Mo-ku-tu-shu" should be Mogadishu, but difficult to guess that "Hsien-lo" means Thailand and "Chiu chiang" means Palembang (in Southern Sumatra). It is not possible to guess these names; they must be derived from descriptions of the places.

So let us now consider what the Chinese chronicler himself has to say about the expeditions of Chen Ho, who had been appointed by emperor Yung-lo as principal envoy and commander in chief of six naval expeditions to the "Western Oceans" between 1405 and 1421-24. Ma Huan was appointed as official translator to Cheng Ho's staff in 1412 after having been instructed in the Arab script and language. He participated in three of these expeditions, and he was on ships that that went to Arab countries around the Persian Gulf and ended up in Mecca. Ma Huan was a Muslim, as apparently many Chinese were in that period. We do not have to go into the individual expeditions; for us it is only important to learn where the Chinese themselves claim to have been.

It is difficult to believe the enormous size of the fleets that are reported. From the admiral down to officers, interpreters, doctors, accountants, sailors and boatmen, a total of 27,000 persons was sent out. The fleet consisted of more than 100 large ships (bearing wonderfully romantic names, such as "Pure Harmony", "Lasting Tranquility" and "Peaceful Crossing"). This number of ships is more than any European nation had been able to mobilize before the 20th century. Many of the ships were known as "treasure ships" because they brought back "unnamed treasures of untold quantities". The ships came in different classes: the smallest had three masts; the largest nine; and their length was from 45 to 85 meters, an enormous length for wooden ships. In cross-section, the ships were almost rectangular, with bow and stern being quite blunt, but capable of withstanding bad weather. Great strength was derived from a number of vertical bulkheads that facilitated the construction of watertight compartments. The masts were up to 25 meters high, and they were staggered, that is to say, positioned on the sides of the centerline and always raked at an angle to the vertical. The result of this rectangular construction is a very strong but slow-moving ship, difficult to maneuver and unable to sail sharply into the wind.

The ships had more than men on board: there were concubines for the crew, and scores of horses to ride on land, and live pigs and dogs for food. It is staggering to consider the quantity of drinking water needed for such an expedition. As instruments for navigation, the Chinese had the magnetic compass (the needle floating in water), lead-and-line to ascertain the speed of the ship, the cross-staff to fix the latitude, the longitude was estimated by noting the number of watches that elapsed during the run at the measured speed. Furthermore, they had maritime diagrams and sailing directions.

The commercial interest of the expeditions was to export as well as import. Porcelain, silk, lacquer-ware and copper cash were exported; pepper and other spices, camphor, sandalwood, incense, cotton fabrics, sugar, ivory, rhinoceros horns and sugar were imported. There was also a scientific interest: Cheng Ho brought back valuables as well as rarities such as gems, drugs, minerals, and living animals unknown in China: lions, leopards, giraffes, oryx, zebras and ostriches.

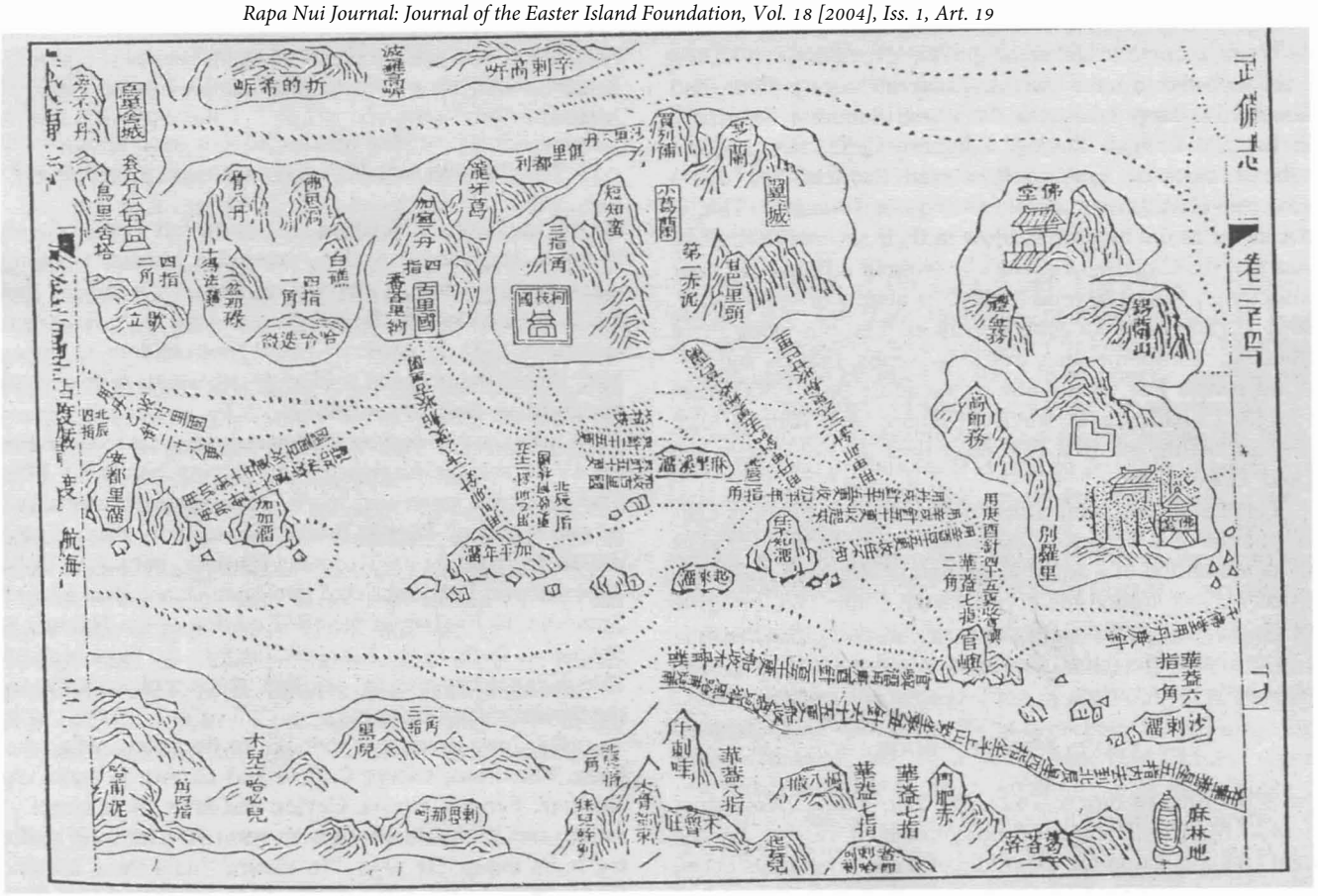

Figure 2. A portion of Ma Huan's map (made about 1423, in a strip 21 feet long) shows "portions of India, Ceylon, the Maldive Islands and East Africa". Navigation instruction were textual and sketchy (from Friis 1967).

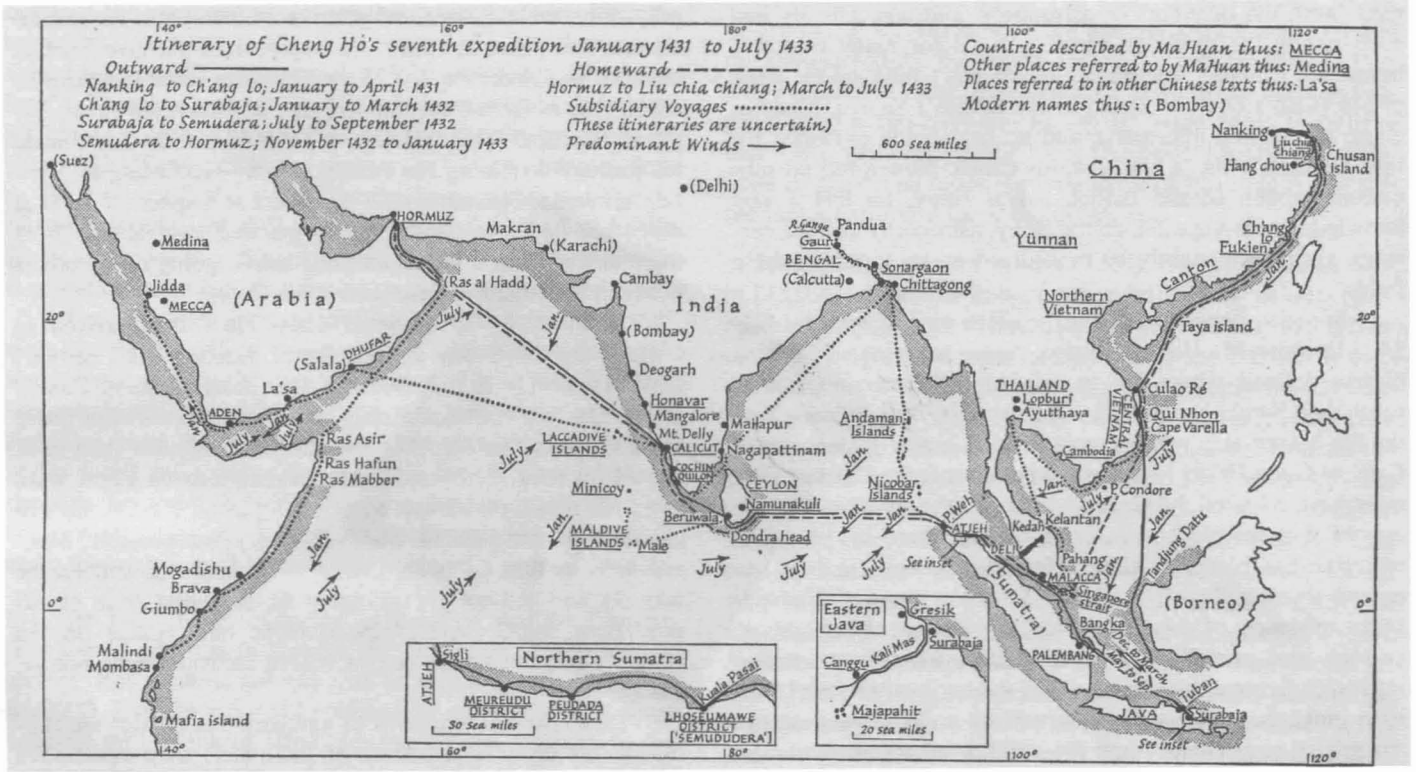

Figure 3. Map from Ma Huan 1433, *The Overall Survey of the Ocean's Shores* (from Mills 1970).

We now come to the areas that the expeditions of Cheng Ho are reported to have visited. These include (present-day) Vietnam, Thailand, Malaysia, Java, and Sumatra, the Andaman Islands, Bengal, Ceylon, Southern India, Hormuz, the Southeast coast of Arabia, Aden, and the Red Sea up to Mecca, the East African coast up to around Malindi, That is about as far as the monsoons blow in their six-month rhythm, routes that the Chinese could handle without difficulty in their clumsy ships. Going beyond Malindi is quite a different story. This is already quite an achievement as it is, but along these predictable monsoon routes, traffic by Arabs, Indians and Sriwidjaya people had been going on for more than 1,500 years before the Chinese came. But the Chinese were there at least 150 years before the first European fleet arrived east of the Cape of Good Hope.

There is no mention, either by Ma Huan or by other Chinese sources that were not destroyed, of any further voyages with the exception of a possible landfall in Northern Australia, but that is "just around the corner" from China. We can give the Chinese the benefit of the doubt on this point. But, according to their own accounts, they discovered nothing new; others had been there earlier.

GAVIN MENZIES' BOOK

Now is the time to turn to *1421, the Year China Discovered America*. Menzies should be complimented in that he has sought an explanation for the riddle of these mysterious maps, made prior to recorded discoveries. If European sailors had made them, there would have been a record; therefore others must have made them. Who could that be? In my opinion there are only two candidates: the Arabs, who had the compass, were the inventors of astronomy, and who already had been plying the monsoon route to India for many centuries before the Chinese. The other candidate is China, on the basis of Ma Huan's *Overall Survey of the Ocean's Shores*. Menzies chose the second alternative and he has sought evidence for this. He clearly has a bias towards China. Now a retired submarine captain of the British Royal Navy, he has a vast knowledge of navigation, cartography, astronomy and sea currents. He must certainly be considered as an expert in these fields.

Menzies concentrates on the sixth expedition of 1421-1423 in which Ma Huan took part. As we have seen, Ma Huan clearly defined where his expedition had been: no further south than Sofala on the East African coast. Basing himself on the Fra Mauro map with a recognizable Chinese junk drawn at Cape of Good Hope, Menzies postulates that the Chinese fleet must have rounded the Cape and entered the Atlantic. He calculates that the fleet must have arrived there in 1421 and therefore had plenty of time before their return (in 1423) to extend their exploration of "the Ocean's Shores." Menzies seeks evidence of this, using his knowledge of navigation, currents and prevailing wind directions. This means taking into consideration the limitations of the curiously formed Chinese junks that, with their square bows and sterns, were not suitable to steer sharply into the wind or against currents. So he lets them sail with the prevailing winds and currents. That takes him a long way, but before following him on his voyage of imagination, we must first give attention to the travels of Nicolo da Conti, whose report Menzies sees as supporting evidence as well as a vital link to the pre-contact map of Fra Mauro.

THE TRAVELS OF NICOLO DA CONTI IN THE EAST

Nicolo da Conti, a Venetian merchant, left Venice for Egypt in 1419. He learned Arabic, married a Muslim woman, and converted to Islam. Later he resided in Damascus and, in 1420, he traveled via Baghdad to Calicut in India, where he arrived in 1421. His wife and their four children accompanied him. Finally he returned via Egypt, where his wife and two of his children died of the plague. After arriving in Venice in 1444 with the two surviving children, he went to Pope Eugenius IV to ask for forgiveness for having become a Muslim. The pope was interested in da Conti's stories and asked his private secretary Poggio Bracciolini to write them down. He did so in *Historia de Varietate Fortune*, published in Latin. This text was later translated into Spanish and then again from Spanish into English in the 1857 edition of the Hakluyt Society, called *India in the Fifteenth Century*. So there is considerable distance between the original words spoken in Italian and the third translation.

Da Conti gives a description of the places where he has been. These are, except Calicut and Cochin in India, Aden, Hormuz, Bengal, Burma, Ceylon and Java. In da Conti's narrative "India" should not be seen within the limits of the country India today. He says: "In Central India there are two islands towards the extreme confines of the world, both of which are called Java". Da Conti does mention Cathay, but he does not say that he has been there himself. Of all the places visited by him, da Conti describes the people, their religion, polygamy, their dresses and punishments and also natural resources and minerals found. His report does not give a single date; he was underway for 25 years, and in some locations he states that he spent several months, and traveled great distances overland. This makes it impossible that da Conti made his journey on Cheng Ho's fleet, which – according to Menzies himself – circled around the world at a speed of 100 sea miles per day. We should not forget that long before 1421 there already was a lot of maritime traffic going on by others between the countries described by da Conti.

In the year 1421, when Chen Ho's fleet arrived in Calicut, da Conti was already there. Menzies "felt certain" that they must have met, because their descriptions of Calicut are similar, but this would only be logical and does not prove anything. Menzies suggests that the Chinese must then have passed on their cartographical information to da Conti who, upon his return to Venice, must have passed it on to his co-citizen Fra Mauro for his map. But this is not possible: Menzies tells us that, in 1421, Cheng Ho's fleet was still on the way out and had not yet arrived at the southeast coast of Africa. How could Cape of Good Hope then appear on Fra Mauro's map on the basis of Chinese measurements not yet made?

Da Conti's descriptions of navigation and ships are confusing. He says: "The natives of India steer their vessels for the most part by the stars of the southern hemisphere, as they rarely see those of the North". Menzies says that the Chinese orientated themselves on the Polar Star and that they "could

not determine their position South of the Equator where Polaris is invisible". Da Conti continues to say that the natives of India "are not acquainted with the compass" (but we know that the Chinese were well acquainted with it). He then continues: "They build some ships much larger than ours … with five sails and as many masts. The lower part is constructed with triple planks . … But some ships are so built in compartments, that should one part be shattered, the other portion remaining entire, may accomplish the voyage". This can only refer to the Chinese junk, but no mention at all is made by da Conti of Cheng Ho or the Chinese fleet, let alone of their meeting. I feel certain that if da Conti had met the Chinese, they would have explained to him that they were not from India, but from a mighty nation further east, one that claimed tribute from every other country, including India.

Da Conti's narrative, and his supposed passing on Chinese cartography to Fra Mauro 23 years later, is a vital link in Menzies' theory. In my opinion, this link does not exist.

Menzies calculates that, at average speeds of 4.6 sea miles per hour, or approximately 100 miles per day, the Chinese would have arrived near the southern point of Africa around August 1421. Their different flotillas only returned to China in 1423-24 and he asks himself where they were in the interval and begins speculating as to where they could have gone.

The Realm of Conjecture and Speculation

Menzies seeks evidence of Chinese visits dating from 1421 from shipwrecks, porcelain, and other Chinese artifacts, stone tablets with inscriptions, the Rhode Island Tower, etc., all over the world. It would be far too much to go into all the details and the supposed itineraries that he interprets as Chinese souvenirs (see maps in Menzies, pages 115, "The Journey to Tierra del Fuego"; and page 284, "The Journey to Rhode Island"). The places where he claims to have found evidence of a Chinese presence in America and the Pacific are given on pages 233 ("Evidence of the visit of the Chinese treasure fleet to the Americas" and 402, "Chinese bases across the Pacific Ocean"). Readers of *RNJ* will be surprised to see that Easter Island is shown as a "Chinese base", as is Pitcairn and Tahiti. It would be redundant to point out every spot mentioned.

The itineraries indicated follow, more or less, ocean currents and the prevailing winds, so the Chinese could have followed them even in their squarish ships. It is in this field that Menzies is the expert: he suggests that somewhere along the Brazilian coast the fleet separated, one part heading for Magellan Strait and the Pacific, the other for the Caribbean and the Atlantic coast of North America. Starting with my own conclusion, I consider all this highly improbable. In order to make this clear I shall present four points of a general nature:

1) The Time Table. Menzies' assumption that the Chinese fleet would progress at around 100 sea miles per day seems correct. But he does not say that he means per day actually SAILED. Even in a normal commercial voyage, sailing ships are held up by lack of wind, adverse storms, damage to the ships needing repair, the periodical necessity to clean the bottoms of the ships, the need to seek drinking water, etc. Other journals that I have followed show that less than half the days away from home were sailing days. If the object of the voyage is to make maps, this is even more so. Captain Cook made three trips that lasted years in order to map part of the Pacific. Why was Charles Darwin able to spend weeks far inland? Because Captain Fitzroy was busy mapping the Atlantic coast of South America. It is impossible to make maps at a rate of 100 miles per day.

2) The Problem of Drinking Water. The Chinese themselves say that they had many thousands of men, concubines, horses and dogs on board, all consuming drinking water. How many barrels have to be filled by hand from rivers along the route, and for what length of time? Along the monsoon route along the coast of India, Arabia and East Africa you do not have to stock for long periods for it is always possible to reach a port in a short time. But for the ocean crossings, as indicated on Menzies' maps, you need a drinking water supply for many weeks. With so many people on board this is utterly impossible. I think that this point alone refutes Menzies' assertion.

3) The Quality of the Chinese Maps. The new emperor Zhu Gaozhi may have ordered the destruction of all evidence of Chinese exploration voyages, but at least Ma Huan's account escaped, along with the maps in his report. On his map of the Indian Ocean (Figure 2), if you cannot read Chinese characters, it is impossible to make anything out of this without the explanatory map next to it (Figure 3). Ceylon has north at the top, India northeast, and Africa the west. The different parts are not at all according to the same scale, neither do they show the correct coastlines. Such a map can only be described as "textual navigation instructions with some sketches added". The texts indicate the stars to follow when you wish to go from one place to the other. The same applies to the "stellar diagrams" of Ma Huan of which one, indicating with text and the stars to follow, the course to follow from Hormuz in Persia to Calicut in India, is reproduced in Menzies' book as Figure 5 (pages 290-291) and Figure 10 (page 345). To believe that these diagrams could form the basis for the beautiful, quite detailed, and fairly accurate maps of Piri Reis and Waldseemüller requires a lot of fantasy indeed.

4) Ignorance of History prior to 1421. The most serious flaw in Menzies' reasoning in his fixation on 1421 is his total ignorance of history prior to that date. He sees the fact that different food crops were once carried across the Pacific in both directions as a confirmation of his theory: only the Chinese were everywhere, so only they can have accomplished that. He suggests that it was Ma Huan who took the banana, the sweet potato and the coconut palm across the Pacific; he even states, "No Polynesian ships are ever known to have left the Pacific to enter the Indian and South Atlantic Ocean." This fundamental error is certainly a most serious heresy for all who have studied Polynesian navigation and the history of Easter Island. Polynesian outrigger canoes, steered by the Austronesian ancestors of the Polynesians, went as far as Madagascar at least a thousand years before 1421, and the Sriwidjaya navy came to Aden in their outriggers about seven hundred years before the Chinese. Here Menzies simply does not know what he is talking about. Migration from Southeast Asia to Polynesia started 2,000 BC (that is, 3,400 years before 1421), it reached Samoa by 1500 BC and finally Easter Island

around AD 700. It is in that period that crops, indispensable for survival, were carried to and fro. Please reread the inventory of what Hotu Matu'a took with him to Rapa Nui in Thomas Barthel's *The Eighth Land* (Honolulu, 1974). Further recommended reading is J. Innes Miller, *The Spice Trade of the Roman Empire*, Stanley M. Burstein, *Agatharchides of Cnidus on the Erythraean Sea* (The Hakluyt Society, London, 1989); and O. W. Wolters, *Early Indonesian Commerce, a Study of the Origins of Srivijaya* (Ithaca, New York, 1967).

These books clearly show that, long before Christ, there was already active maritime trade along the monsoon route from Malaya/Indonesia to China, and via India to Arabia and East Africa. Cinnamon from Ceylon was indispensable for embalming Egyptian mummies during the Han dynasty (from 206 BC); cloves from the Moluccas were consumed in China around AD 800; hundreds of bronze kettledrums from Dongson (now in Vietnam) found their way to the Indonesian island of Alor. There are many more examples. It is simply ridiculous to pretend that the Chinese in 1421 were the first navigators around the Indian Ocean and the Pacific.

The final result of all this is that I cannot believe that the Chinese were the source of those pre-contact maps. So the question remains: who supplied the data? I consider this one of the most intriguing questions of history and I think that more effort should be expended to try and solve it.

Any volunteers…?

Literature consulted

Barthel, T. S. 1974. *The Eighth Land.* Honolulu.

Burstein, S. 1989. *Agatharchides of Cnidus on the Erythraean Sea.* London: The Hakluyt Society.

Nicolò da Conti's Travels, translated by R. J. Major 1857. *India in the Fifteenth Century.* London: Hakluyt Society.

Friis, Herman R. 1967. *The Pacific Basin, A History of its Geographical Exploration*. New York.

Ma Huan. "Ying-yai Sheng-lan", *The Overall Survey of the Ocean's Shores 1433,* translated by J. V. G. Mills 1970. Cambridge: Hakluyt Society.

Menzies, G. 2002. *1421 The Year China Discovered America*. New York.

Miller, J. I.1969. *The Spice Trade of the Roman Empire*. Oxford.

Mills, J. V. G. 1970. *The Overall Survey of the Ocean's Shores.* Cambridge: The Hakluyt Society,.

Özen, M. E. 1998. *Piri Reis and His Charts*. Istanbul.

Pigafetta, Antonio. 1969 [1525]. *Navigation et Découvrement de la Inde Supérieure et Isles de Malucques, ou naissent les Cloux de Girofles*, . Facs, Yale University Press.

Wolters, O. W. 1967. *Early Indonesian Commerce, a Study of the Origins of Srivijaya*. Ithaca, N. Y.

EASTER ISLAND: SCIENTIFIC EXPLORATION INTO THE WORLD'S ENVIRONMENTAL PROBLEMS IN MICROCOSM

edited by John Loret and John T. Tanacredi
Kluwer Academic / Plenum Publishers, 2003; $95; 240 pages
ISBN 0-306-47494-8

Review by Shawn McLaughlin

It has always been easier to destroy than to create – and in literary terms this means it's usually easier to criticize than praise. Most decent works deserve a healthy smattering of both. The book that is the subject of this review, however, draws so much attention to its shortcomings (albeit sometimes minor ones) that praise is hard to come by.

I bought this expensive 2003 book to augment both my growing collection of Easter Island publications and my knowledge of Easter Island itself. So I began reading with enthusiasm. And when I came upon the first of a series of many typos, boo-boos, and flat-out errors, I first dismissed them as a reflection on how people rely far too heavily on spell-checkers in their word processing software. However, as the number of mistakes grew, I became distracted. That's when I started compiling a list.

Some of these will no doubt seem picayune or the product of a pedantic mind. Others may be subject to debate. But it is the sheer number of problems, the way they're addressed and, by extension, the evident lack of consistency and editing that makes me respond in two ways (well, three, if you count this review – but I was asked to write it): First, annoyance that I paid $57 for this book, and that's with a 40% discount (the book is available from Amazon.com and Kluwer directly for a whopping $95); second, as potentially illogical as it may be to judge a whole work on the basis of seemingly minor errors, I can't help wondering if the rest of the book – and its research – was as sloppily prepared. Below are some of the problems I encountered.

The very first line of text in the Introduction (p. 1) begins with a sentence fragment: "In the fall of 1954 as a graduate student at the University of Oslo, Norway". Not off to a good start. And, on page 13, the last name of one of the principal authors of the book – Warren Beck – is misspelled as "Back".

Numerous and distracting spelling errors include Stone Henge (p. vii); Lica (for Leica), (p. 2); Ho Tuiti for Hotu Iti (p.6); Hanga Rau for Hanga Roa (p. 15); matoas for mata'a (p. 27); Paka Vaka for Papa Vaka (p. 48 as well as Index); Mutu for Motu (p. 65 and 68); Motu Kau Kau for Motu Kao Kao (p. 78); cast for caste (p.93); cupuoles for cupules (p. 96); Hyerdahl for Heyerdahl (p. 136 and 147); Mai Kava Kava for Moai Kava Kava (p. 235); Motu Kau Lau for Motu Kao Kao, Motu Taurara for Motu Tautara; and Metaux for Métraux (p.235); Roggeveen is misspelled "Toggeveen" (p. 239); Plate 2 misspells Rano Raraku as "Rano Ravaku"; Plate 7 misspells Motu Nui as "Motu Nai".

In an effort to reinforce the theme of Easter Island as a microcosm (p. vii), it is asserted that the Rapanui had the option to migrate to other locales, in contrast to the people of the Earth generally who have no where to go – which essentially flies in the face of the closed system Easter Island is supposed